LEARN ONE THING AT A TIME

JULY 15, 1915 SERIAL NO. 87

Vincent Summerfield

THE MENTOR

THE STORY OF THE AMERICAN RAILROAD

By ALBERT BUSHNELL HART
Professor of Government
Harvard University

DEPARTMENT OF HISTORY

VOLUME 3
NUMBER 11

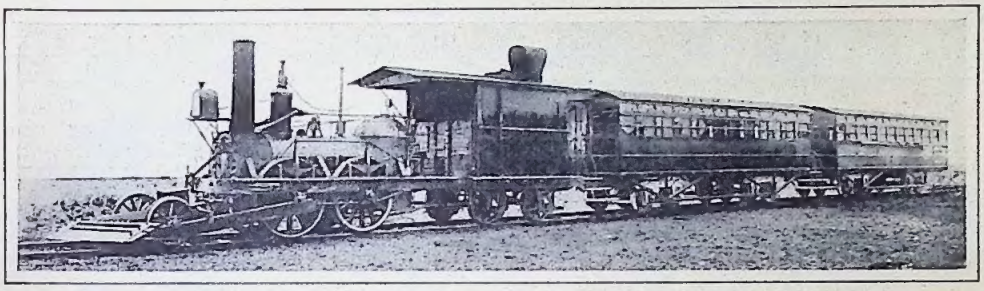
FIFTEEN CENTS A COPY

Responsibility

THE most important thought a man can have is that of his individual responsibility and his duty to discharge it honorably. In no sphere of activity are the principles of responsibility and duty more vital and potent than in railroad work. In no field of endeavor are the duties more clearly defined or the stern logic of consequences more frankly expressed. The modern railroad system is a vast fabric of interlocking responsibility—every individual having his own particular responsibility and each individual checking another. Each man's duty lies plain before him—beyond that are the alternatives: success with honor or tragic failure.

AND to most men the call of duty is not uttered in the tones of the trumpet. It is simply the voice of nature telling him that the span of life was lent to him for duties—telling him that every station in life is necessary, every position deserving of respect, and that it is not the station nor the position that honors man, but the fulfilment of duty.

FOR most of us the pathway of duty is simple and clear, the work near at hand, and responsibility is constant through the day's toil. For the strength of humanity we look not to our exalted heroes. "Our grand business," as a philosopher says, "is not to grasp at the stars, but to do faithfully life's common work as it comes."



The "John Bull," operated in 1831 on the Pennsylvania Railroad, between Bordentown and South Amboy, N. J.

THE STORY OF THE AMERICAN RAILROAD

By ALBERT BUSHNELL HART

THE MENTOR · DEPARTMENT OF HISTORY · JULY 15, 1915

MENTOR GRAVURES

HANGING BRIDGE, ROYAL GORGE, GRAND CANYON OF THE ARKANSAS, COLORADO · CROSSING THE SOUTHERN END OF GREAT SALT LAKE, UTAH · THE MODERN PERFECTED TRAIN · THROUGH THE ROYAL GORGE, GRAND CANYON OF THE ARKANSAS, COLORADO · THE HORSE-SHOE, DESCHUTES RIVER CANYON, OREGON · PAST AND PRESENT—THE "WILLIAM CROOKS" AND THE NEWEST TYPE LOCOMOTIVE.

PERHAPS the most wonderful thing about railroads is that civilized mankind should have been so long in inventing them. You may still see in Pompeii and Ostia the grooves in the stone pavements worn by wheels. Roman chariot drivers must have noticed how much easier the traction was in those stone ruts; and it would have been a short step to lay lines of grooved blocks on some of the magnificent Roman roads. Had the discovery been made then, and with it the perception that it is easier to groove wheels than pavements, there is little doubt that the Roman Empire could not have been overwhelmed by hordes of barbarians: the Romans would have been able to meet the invaders by a quick and cheap transfer of troops and supplies.

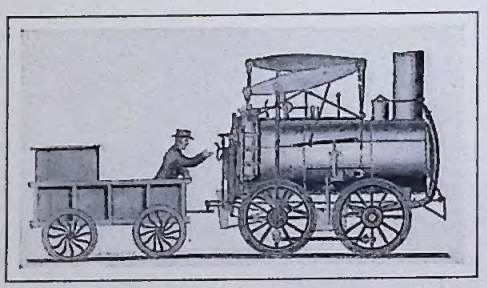
The railroad, when at last it appeared, was the contrivance of unknown English miners, who laid down little parallel rails, on which they pushed by hand coal cars furnished with flanged wheels. The next step was to continue the lines of rails from the pit's mouth to a nearby river, where the coal could be shipped on boats, the cars usually going down by gravity, to be drawn back empty by horses and mules. Such "tramways" were in use in England as early as 1676.

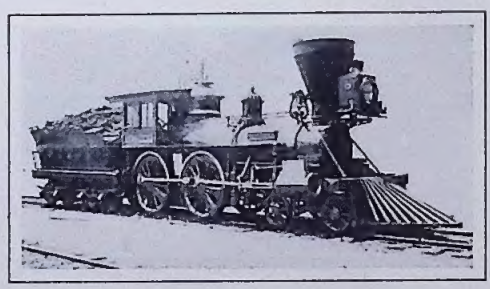
The idea spread to America, and in 1808 the skilful engineer Latrobe

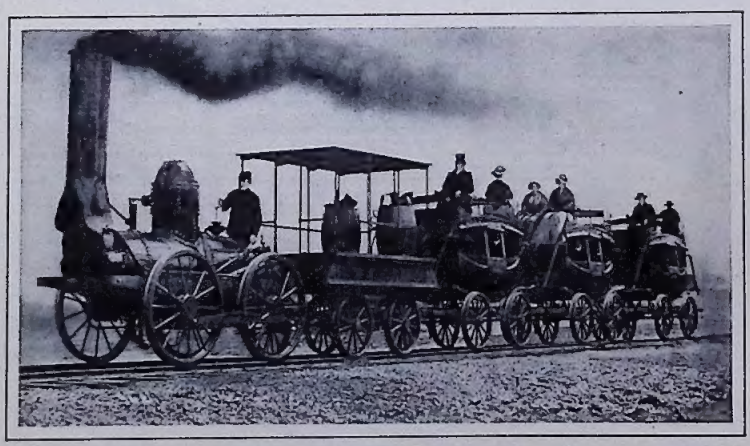
Entered at the Postoffice of New York, N. Y., as second-class matter. Copyright, 1915, by the Mentor Association, Inc.

sent to Albert Gallatin, then secretary of the treasury, what appears to be the first American description of railroads, in which he says:

"A railroad consists of two pairs of parallel ways, one pair for going and the other for returning carriages; single roads, with occasional passing places, are applicable to some situations, and are of course less expensive. . . . The rails are of cast iron. . . . The rails need not be more than five-eighths of an inch average thickness, and they may be







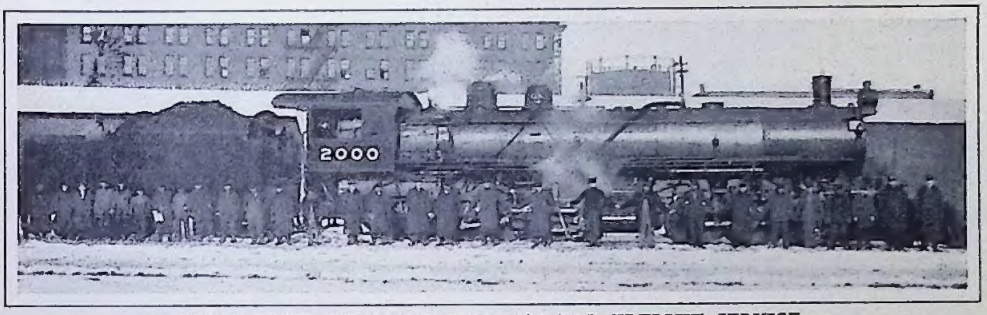
THREE HISTORIC LOCOMOTIVES

On the left, the "Stourbridge Lion," the first locomotive run in America; at the right, "General," an engine with a Civil War career. It was stolen from the Confederates by the "Andrews Raiders;" below, the "De Witt Clinton," the first train operated in New York State, making a trip between Schenectady and Albany in 1831.

cast in lengths of five to six feet. . . . They must be laid at a distance of from three and a half to five feet . . . parallel to each other; the ends of every two forming rails, being let and pinned down into a piece of timber lying across the road. . . . The carriages which travel on these roads may be of various dimensions. . . . They have low cast iron wheels fast upon the axle, which turns round."

When Latrobe passes from description to prophecy he is not so successful. He goes on to say:

"The astonishing loads drawn upon railroads by single horses in England has induced many of our citizens to hope for their early application to the use of our country. I fear this hope is vain, excepting on a very small scale, and that chiefly in the coal country near Richmond; for it is evident that upon a railroad no other carriage but that which is expressly



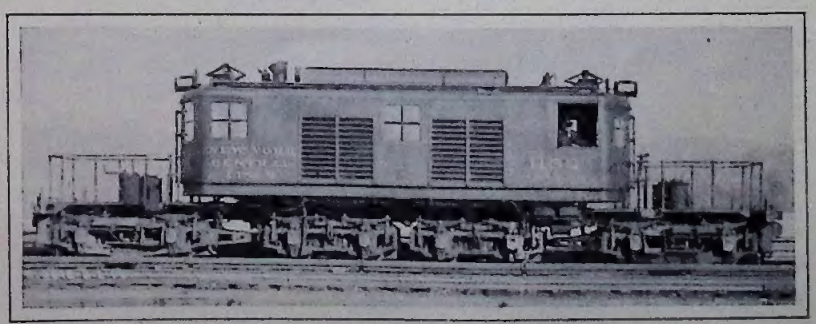
LOCOMOTIVE SPECIALLY DESIGNED FOR FREIGHT SERVICE
This is really two engines in one, and is designed for heavy hauls on steep grades

constructed for the purpose, can be employed; and that to render a railroad sufficiently saving of the expense of common carriage to justify the cost of its erection, there must be a very great demand for its use. But the sort of produce which is carried to our markets is collected from such scattered points, and comes by such a diversity of routes, that railroads are out of the question as to the carriage of common articles."

FIRST AMERICAN RAILROAD

Latrobe did not foresee the great future of transportation. He saw only animal motive power. His notion of a railroad was something like the two-foot tramway at Nikko, Japan, where a big and stupid bullock plows along, drawing a comical little car loaded with copper ingots. The success of railroads demanded a high-powered motor of some kind, and it was found in the steam engine. The earliest locomotive was built in England about 1810 and was very crude and clumsy; then in 1829 came a famous trial between several types of locomotives, in which George Stephenson's Rocket won, and made the amazing speed of over twenty miles an hour.

Meanwhile tramways were creeping into America. One was opened from a granite quarry at Quincy, Massachusetts, five miles down to tidewater, in 1826; the next year a coal tramway was built at Mauch Chunk, Pennsylvania. In the year 1828 the Baltimore & Ohio Railroad was chartered, and in 1830 was running from Baltimore to Ellicott Mills. Several English locomotives were brought over; but Peter Cooper

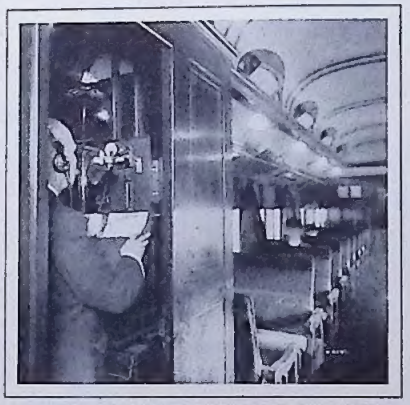


AN ELECTRIC LOCOMOTIVE
One of the latest-type electric locomotives in service on the New York Central

of New York built the Tom Thumb, the first American engine, which was bought by the Baltimore & Ohio. The tubes of the boiler are said to have been made from gun barrels. Then various improved types of locomotive were brought out by that railroad, and the manufacture progressed from the Davis "Grasshopper" through Winans' "Mud Digger" and "Camelback," the Hayes "Dutch Wagon," and types like the Mogul, the Mikado and others to the modern double Mallet engines.

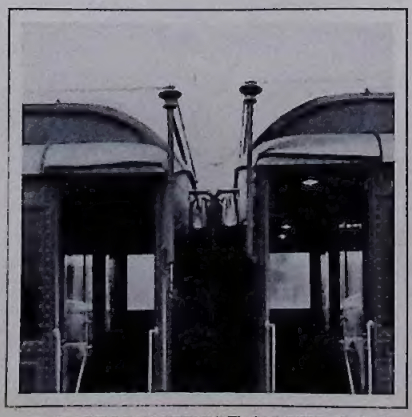
When it was once proved that the locomotive was a success railroads began to spread throughout the country. The early roads were modeled on the turnpike companies; they ran a few miles from one city to another; there was no notion of long through lines. The first passenger cars were inconvenient imitations of stagecoaches. After a brief trial of the compartment system all the railroads built box cars with the middle aisle and two rows of seats. There was a time when the traveler westward from Albany by rail reached one journey's end and began another five times before he got to Buffalo. Many early lines were part railroad and part steamer, such as the route from Boston to New York, via Stonington on Long Island Sound; the original Erie Railroad from Piermont on the Hudson to Dunkirk; and the line from Washington, via Aquia Creek, to Richmond.

The early roads were built by stock companies which raised their money on the spot, and some of the first people to get in made fortunes out of the rises in value. On the other hand, many of the early railroads were bankrupted from one to three times before they got a fair start.



THE WIRELESS TELEPHONE IN OPERATION ON ONE OF THE TRAINS OF THE DELAWARE, LACKAWANNA & WESTERN RAILROAD

THE WIRELESS TELEGRAPH
Found effective during the winter blizzard of 1914, when telegraph poles were down

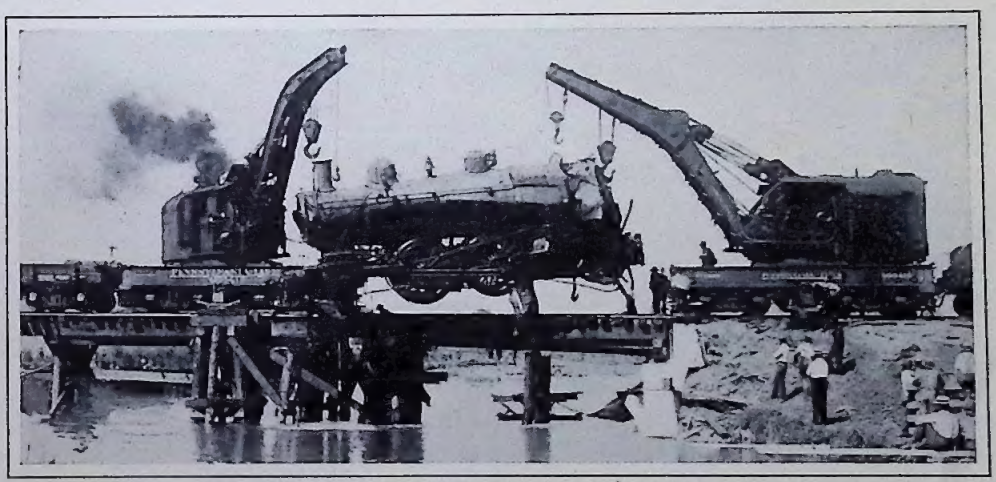


WIRELESS ANTENNÆ ON THE CARS

RAILROADS BEFORE THE WAR

In several European countries the railroads were, from the first, built and owned by the government, and that method was followed in several of the states of the Union. Michigan built half the main line from Detroit to Chicago. Massachusetts constructed the Hoosac Tunnel out of state funds, and about forty miles of connecting road. Illinois, Georgia, and North Carolina built short lines. None of these ventures prospered, and sooner or later all the state roads, with an exception or two, were sold, given, or leased to private companies.

The early railroads were ill built, slow, and inconvenient. The English traveler Murray tells how "the train danced up and down on the line, more



HOISTING A LOCOMOTIVE FROM A RIVERBED

During the floods that swept the state of Ohio in March, 1913, a locomotive of the Pennsylvania Railroad broke through a bridge at East Liberty. In August two wrecking cranes of the railroad hoisted the engine from its resting place on the bed of the river, and carried it off to the repair shops

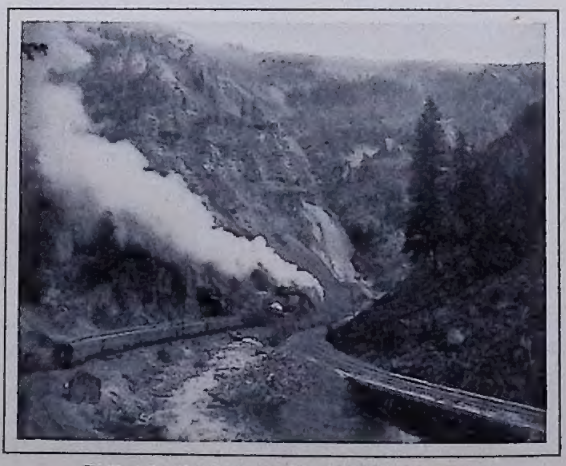
than was pleasant, from the boggy nature of the ground." Trains might be expected, if "about on time," anywhere from half an hour ahead of time to an hour late. The stations were poor and dirty; grade crossings were numerous; accidents frequent, a favorite type being the ripping up of the bottom of the car by the loosening and bending of a "strap rail," the end of which stood up like a snag in a river.

RAILROAD CONSOLIDATION

It was only a matter of time till the country should wake up to the possibilities of long distance freight and passenger service. By 1835 the wealthy cotton men of South Carolina had built a road 137 miles long from Hamburg on the Savannah River to Charleston. All the coast cities saw the advantage of direct connection with the interior. For the benefit of New York City were built the lines from Albany to Buffalo, and the

direct Erie Railroad. For Philadelphia, a combination of railroads and canals was completed all the way to Pittsburg, in 1838; and soon after an all-rail route was opened. From Baltimore, the Baltimore & Ohio road eventually reached westward to Wheeling on the Ohio River. Thus before 1861 continuous lines of railroad stretched from the Atlantic Coast cities to Chicago and St. Louis, and from Chicago to Mobile and New Orleans. In all about 32,000 miles of railroad were completed.

THE COMPLETION OF THE UNION PACIFIC RAILROAD



THE DENVER & RIO GRANDE RAILROAD
Winding through the canyon of the Eagle River, Colorado

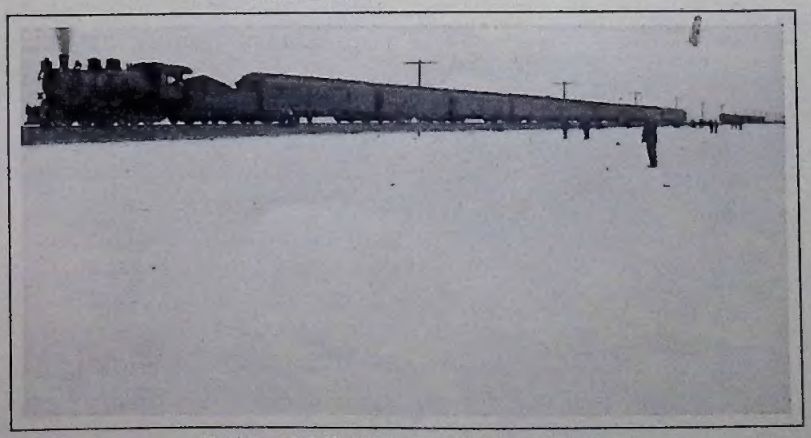
In the American Civil War railroads were, for the first time in the history of the world, used regularly for the carrying and supplying of armies; and during the struggle, Congress carried out the bold plan of fostering railroads across the continent. Here was an opportunity to try the possibilities of government ownership; but the country was then moving in the direction of consolidation under private ownership. The first "American railroad king" arose in the person of Cornelius Vanderbilt, who started out as a steamboat man, got interested in a transit system across the Isthmus of Nicaragua, and then turned his attention to railroads. He made a combination of the short lines, which together reached across New York, into the New York Central. Then he combined that road with the Hudson River, through a bridge across the Hudson at Albany, built in 1866, making a through all-rail line from New York City to Buffalo.

The second great combination was the Pennsylvania system, which bought roads from Pittsburg to St. Louis, Chicago, Cleveland, and Cincinnati, and then, about 1871, acquired a line from Philadelphia to New York. The Baltimore & Ohio and the Erie Railroads also extended to Cincinnati, St. Louis, and Chicago. In the South several great systems were gradually made up by building new lines, buying old roads, and completing missing links.

THROUGH BUSINESS

This growth and consolidation of railroads was needed to provide for the enormous increase in long distance freight and passenger traffic which arose after 1875. The grain of the Northwest and the grain and cattle of the Southwest found a market in Europe, and had to be transported to the seaboard. This gave a steady and profitable business to the trunk lines from Chicago and St. Louis to eastern seaports. In return the manufactures of New England and the Middle States and the coal of Pennsylvania and Ohio poured westward. Hence the railroads double tracked, built belt roads round the cities, and erected immense elevators and cattle yards. The invention of the steel rail by Bessemer and the building of steel bridges made it possible to carry heavier trains. These were drawn by heavier locomotives, which required still more ponderous rails and stronger bridges. Freight traffic grew till, on the Pennsylvania low-grade freight line between Harrisburg and New York, regular trains of fifty coal cars each sometimes ran as often as every ten minutes

MODERN STATION IN THE FAR WEST
The western entrance to Yellowstone Park on the Oregon Short Line Railroad



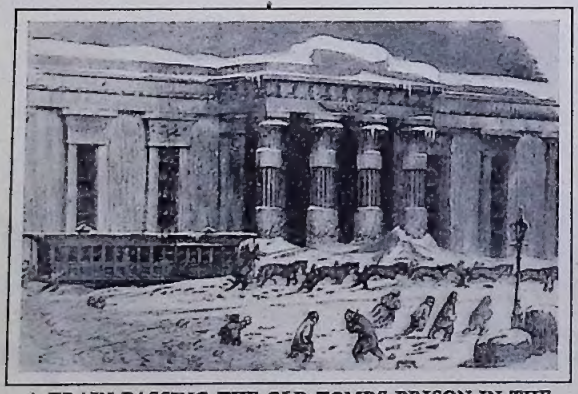
TRAIN CROSSING SALT BEDS IN UTAH
These beds on the Western Pacific Railway are about sixty miles long by eight miles wide. The salt is ninety per cent pure, and varies in depth from a few inches at the edges to twelve or fifteen inches toward the center. Wonderful mirage effects are seen in the vicinity

throughout the twenty-four hours.

Passenger travel grew in like manner. Hundreds of thousands of immigrants landed at the ports, and found their way west. The Far West was settled up by people from states farther east; the growth of the system of "drummers"—or, to speak more elegantly, "commercial travelers"—greatly increased travel. To accommodate this long-distance movement sleeping car lines grew up. At first railroads had their own cars; but where the route ran over several different roads it was more convenient to use cars of a general company. Woodruff, Wagner, and Pullman were all pioneers in Palace car manufacture, and gradually the Pullman Company absorbed the others. The traveler could find through cars from Boston or New York or Washington to almost any important point east of the Mississippi River and Chicago; and from Chicago and St. Louis and New Orleans through sleepers ran to Denver, Salt Lake City, and all Pacific ports. Then to save time, and make sure of meals, dining cars were introduced.

The result has been that in democratic America we have more classes of railroad travel than in any other country in the world. Over the same road, on the

AN EARLY RAILROAD SCENE
At Little Falls, in the Valley of the Mohawk, New York State



A TRAIN PASSING THE OLD TOMBS PRISON IN THE WINTER OF 1853
At this time the terminal of the New York & Harlem Railroad was back of the New York City Hall

OLD STATION OF THE HARLEM ROAD
At Twenty-sixth Street and Fourth Avenue, New York City. This is now part of the site on which Madison Square Garden is standing. The New Haven R. R. Station was at Twenty-seventh street

same day, the following kinds of railroad passengers may be carried:

1. Pullman passengers, on a daily or weekly limited train, with extra fares for extra speeds.
2. Pullman passengers in drawing rooms or compartments on regular daily trains.
3. Pullman passengers in standard sleeping car berths.
4. Ordinary coach passengers (the so-called "first class") in day coaches.
5. Second-class passengers, traveling in tourist sleeping cars.
6. Second-class passengers in smoking cars.
7. Emigrants in cars somewhat poorer than the ordinary "smoker."

THE GRAND CENTRAL TERMINAL, NEW YORK CITY
Reproduced from the complete plan

TRIUMPHS OF ENGINEERING

In so broad a country as ours, with its lofty mountains, its deep gorges, its broad rivers, railroads are not built easily. It is a small matter to lay down a light, single-track line across nearly level prairies; but it took bold engineers to bridge the Ohio and Mississippi and Missouri, the Colorado and the Columbia; and still more to carry a railroad line, open both summer and winter, across the Continental Divide. Railroad bridges alone have absorbed at least a thousand million dollars, beginning with the arch of spliced timbers with its wooden roof, and the Howe truss bridge, and proceeding to the iron girder bridge, and to the far-flung arches of the Eads steel bridge at St. Louis and the enormous cantilever bridges over the Columbia, the St. Lawrence and other rivers. The late Edward Everett Hale used to say that he never crossed the Mississippi without putting up a prayer of thankfulness to the "Pontifex Maximus" of our times, the great bridge engineer George S. Morison.

Some mountains, such as the Hoosac Range in Massachusetts and the

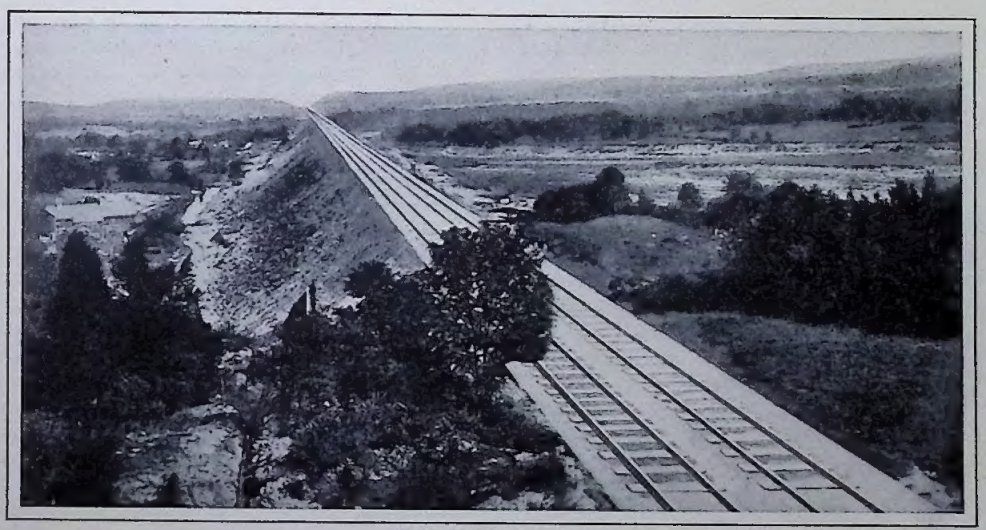
THE PENNSYLVANIA STATION, NEW YORK CITY

Cascade Mountains in Washington, can be punctured by a tunnel; but American engineers have developed a wriggling, twisting, corkscrew mountain railroad, of which the most amazing is perhaps the line from Colorado Springs to Cripple Creek. That railroad from a distance looks like a child's plaything, winding in and out, scraping slopes, diving through ridges, circling precipices, ever steeply upward till you cross the divide at an elevation of about eleven thousand feet, under the shadow of Pike's Peak. Or you may take another wonderful line, winding and ever winding and heading to all points of the compass, which finally brings you over the ridge at the foot of mighty Mount Shasta. Or you may loop the loop on the new mountain section of the Canadian Pacific. In such places you are in the midst of a titanic struggle between nature and the railroad builder. Nature says, "These are my mountains, my gorges: no locomotive wheel shall invade my privacy!" Man replies, "This is my country, these are my rocks and rivers, and I will build where I please a road that will bind you down with rods of steel!"

The American may also rejoice in the splendid palaces which are going up all over the country to accommodate him and his children as they take and leave the trains. There was a time when Europe could reproach us with mean and tawdry stations, set down in the least inviting part of our cities. Till a short time ago the immense travel of Kansas City was accommodated in a barrack, which seemed to have blown off the bluff, and to have fallen into a mudhole. Today Kansas City has one of the biggest and most convenient stations in the world. Wherever you go—Portland, Detroit, Pittsburg, St. Louis, Philadelphia, Boston—you find like facilities. It was reserved for the capital city of the nation to build and occupy one of the most magnificent structures ever erected for the use of travelers. In grandeur, even that building is outdone by the great

stations of the Pennsylvania and the New York Central in New York City.

Truly the railroads are a part of the American commonwealth—not only because they live and move and have their being under the direction of state and national governments, but because they help to upbuild the nation. American railroads have cost twenty thousand million dollars, and employ over a million and a half men; they have made a great federal government possible, by bringing together commerce and people from the ends of the republic. The railroads are the arteries of civilized states, feeding the body politic, and nourishing the brain of the people. If the wheels should cease to go round for a single week, starvation would beset our greatest cities. The interests of the railroads and of the people are one.



THE PEQUEST FILL

On the New Jersey "Cut Off" of the Delaware, Lackawanna & Western Railroad. This "cut off" runs from Lake Hopatcong to Slateford and effects a saving of a little over eleven miles. The Pequest Fill is over three miles long; its height at the highest point is 110 feet

SUPPLEMENTARY READING

RAILROADS: THEIR ORIGIN AND PROBLEMS *By Charles Francis Adams*
Written in 1878 by the distinguished Massachusetts railroad commissioner and historian.

WHEN RAILROADS WERE YOUNG *By C. F. Carter*
An illustrated history of the pioneer days, and also of the building of certain great systems.

AMERICAN RAILWAY TRANSPORTATION *By Prof. E. R. Johnson*
A standard book, covering system, service, interrelations, and relations to the state.

THE AMERICAN RAILWAY, ITS CONSTRUCTION, DEVELOPMENT, MANAGEMENT, AND APPLIANCES (1888)
A popular account, with many illustrations.

THE STRATEGY OF GREAT RAILROADS *By F. H. Spearman*
A graphic account of the development of trunk lines and great systems.

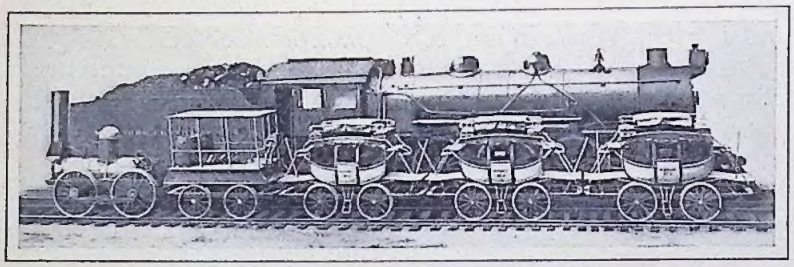
ALL ABOUT RAILWAYS *By F. S. Hartnell*
A comprehensive description (chiefly of English railroads), written for boys; well illustrated.

STORY OF THE RAILROAD *By Cy Warman*
Popular account of the building of the lines west of the Missouri, by a practical train-man.

RAILROAD TRANSPORTATION: ITS HISTORY AND ITS LAWS *By Dr. A. T. Hadley*
Facts, principles and comparisons with the railroad policies and legislation in other nations, by a master of economics.

THE LAST AMERICAN FRONTIER *By F. L. Paxson*
Chapters on the building of the lines far west.

THE OPEN LETTER



THE OLD AND THE NEW

A comparison of the "De Witt Clinton," the first train operated in the State of New York in 1831, and a modern Pacific type steam locomotive. The length of the entire early train does not equal that of the locomotive and its tender

Thousands of people who travel in the suburbs of New Jersey have become familiar with the names of Harvey Springstead and Philip T. Nixon as they appear on two well-groomed locomotives in the car yards. Messrs. Springstead and Nixon have just reason to be proud of the privilege of placing their names on their engines. They belong to the Order of the Red Spot. The Red Spot is on the front of the engine, and it means long and creditable service. I presume that most people suppose that the name on the side of the engine cab, the bright shining bars, the brass star and the Red Spot on the front are adornments expressive merely of the engineer's taste for decoration. Few know that each one of these things is a distinctive mark of merit and part of a system of rewards.

* * *

The Order of the Red Spot applies to engineers alone. This Order is conferred as a reward for good operation of the locomotive, cleanliness and neatness, economy of fuel, low cost of running, avoidance of accidents, and general efficiency on the part of both the fireman and the engineer. The engineer is responsible for everything. It is up to him to keep the fireman in order, as well as the engine. The Red Spot is an honored order of the Erie Railroad—and the membership is large. The highest honor of all conferred upon locomotive engineers on this railroad is the privilege of attaching the engineer's name to the engine. It is granted on the same grounds as those of the Order of the Red Spot, but in addition a long and honorable service in the employ of the road is required.

There are not over a score of engineers who enjoy this privilege—not because more have not deserved it, but because the rule limits it to one engineer in each operating territory.

* * *

Conductors have no brass stars nor red spots, but they have gold bars on their sleeves for service and credit marks on their record for efficiency. These marks count in matters of advancement—and, too, occasionally in matters of discipline. Rewards for upkeep of the railroad track sections are adjusted on a cash basis. Each section of track has a foreman and several sections have one supervisor. Yearly there is an inspection of the various sections, the record being taken by a dynamometer car, which shows the gauge of the track, the ease of riding, and other qualities that enter into the service. The cleanliness of the track and the neatness and set of the ballast under the ties is also taken into consideration. The foreman of the best section in each supervisor's district gets a cash prize, while the best supervisor of all the districts is also rewarded in cash.

* * *

Old Omar said, "Take the cash and let the credit go"; but many a railroad man has come to realize that the cash is soon spent, while the credit is as long as life, and the Red Spot is a badge that can be shown with pride and satisfaction through all the working days. We do not know anything about the section foremen who have won cash prizes, but many of us know Harvey Springstead and Philip T. Nixon, and are glad to do them honor.

W. D. Moffat

EDITOR

THE MENTOR ASSOCIATION

ESTABLISHED FOR THE DEVELOPMENT OF A POPULAR INTEREST IN ART, LITERATURE, SCIENCE, HISTORY, NATURE, AND TRAVEL

THE ADVISORY BOARD

JOHN G. HIBBEN, *President of Princeton University*
HAMILTON W. MABIE, *Author and Editor*
JOHN C. VAN DYKE, *Professor of the History of Art, Rutgers College*
ALBERT BUSHNELL HART, *Professor of Government, Harvard University*
WILLIAM T. HORNADAY, *Director New York Zoological Park*
DWIGHT L. ELMENDORF, *Lecturer and Traveler*

THE purpose of The Mentor Association is to give its members, in an interesting and attractive way, the information in various fields of knowledge which everybody wants to have. The information is imparted by interesting reading matter, prepared under the direction of leading authorities, and by beautiful pictures, produced by the most highly perfected modern processes.

THE MENTOR IS PUBLISHED TWICE A MONTH

SUBSCRIPTION, THREE DOLLARS A YEAR. FOREIGN POSTAGE 75 CENTS EXTRA. CANADIAN POSTAGE 50 CENTS EXTRA. SINGLE COPIES FIFTEEN CENTS. PRESIDENT AND TREASURER, R. M. DONALDSON; VICE-PRESIDENT, JOHN H. HAWLEY; SECRETARY, W. D. MOFFAT

COMPLETE YOUR MENTOR LIBRARY

Subscriptions always begin with the current issue. The following numbers of The Mentor Course, already issued, will be sent postpaid at the rate of fifteen cents each, or one dollar for eight copies.

Serial No.	
1.	Beautiful Children in Art
2.	Makers of American Poetry
3.	Washington, the Capital
4.	Beautiful Women in Art
5.	Romantic Ireland
6.	Masters of Music
7.	Natural Wonders of America
8.	Pictures We Love to Live With
9.	The Conquest of the Peaks
10.	Scotland, the Land of Song and Scenery
11.	Cherubs in Art
12.	Statues With a Story
13.	Story of America in Pictures: The Discoverers
14.	London
15.	The Story of Panama
16.	American Birds of Beauty
17.	Dutch Masterpieces
18.	Paris, the Incomparable
19.	Flowers of Decoration
20.	Makers of American Humor
21.	American Sea Painters
22.	Story of America in Pictures: The Explorers
23.	Sporting Vacations
24.	Switzerland: The Land of Scenic Splendors
25.	American Novelists
26.	American Landscape Painters
27.	Venice, the Island City
28.	The Wife in Art
29.	Great American Inventors
30.	Furniture and Its Makers
31.	Spain and Gibraltar
32.	Historic Spots of America
33.	Beautiful Buildings of the World
34.	Game Birds of America
35.	Story of America in Pictures: The Contest for North America
36.	Famous American Sculptors
37.	The Conquest of the Poles
38.	Napoleon
39.	The Mediterranean
40.	Angels in Art
41.	Famous Composers
42.	Egypt, the Land of Mystery
43.	Story of America in Pictures: The Revolution
44.	Famous English Poets
45.	Makers of American Art
46.	The Ruins of Rome
47.	Makers of Modern Opera
48.	Dürer and Holbein
49.	Vienna, the Queen City
50.	Ancient Athens
51.	The Barbizon Painters
52.	Abraham Lincoln Volume 2
53.	George Washington
54.	Mexico
55.	Famous American Women Painters
56.	The Conquest of the Air
57.	Court Painters of France
58.	Holland
59.	Our Feathered Friends
60.	Glacier National Park
61.	Michelangelo
62.	American Colonial Furniture
63.	American Wild Flowers
64.	Gothic Architecture
65.	The Story of the Rhine
66.	Shakespeare
67.	American Mural Painters
68.	Celebrated Animal Characters
69.	Japan
70.	The Story of the French Revolution
71.	Rugs and Rug Making
72.	Alaska
73.	Charles Dickens
74.	Grecian Masterpieces
75.	Fathers of the Constitution
76.	Masters of the Piano Volume 3
77.	American Historic Homes
78.	Beauty Spots of India
79.	Etchers and Etching
80.	Oliver Cromwell
81.	China
82.	Favorite Trees
83.	Yellowstone National Park
84.	Famous Women Writers of England
85.	Painters of Western Life
86.	China and Pottery of Our Forefathers

NUMBERS TO FOLLOW

August 2. BUTTERFLIES

By Dr. W. J. Holland, Director, Carnegie Institute. Author of "The Butterfly Book."

A very attractive outdoor subject. The lovers of the butterfly are numerous, and the butterfly itself is an object of admiration to many more than the collectors. This is a description in popular words of the various kinds of butterflies, and an account of their habits and of their habitats. The article is illustrated with beautiful plates in colors.

Aug. 16. THE PHILIPPINE ISLANDS

By Dean C. Worcester, Secretary of the Interior of the Philippine Islands, 1901-1913.

Everyone is interested in the Philippines and their future. Mr. Worcester has had a long experience there, and is the recognized leading authority on the subject. The illustrations have been carefully selected from a large collection in his possession.

THE MENTOR ASSOCIATION, INC.

52 EAST 19th STREET, NEW YORK, N. Y.

The Mentor Service

IN addition to the interesting and instructive reading matter in the pages of The Mentor; to the beautiful gravure pictures and the many illustrations in each number; and to the graphic descriptive monographs printed with each of these gravure illustrations—in addition to all this valuable matter in text and in pictures,

THE MENTOR GIVES SERVICE

This service covers the needs of those who want to gain knowledge by an easy and agreeable method.

SUPPLEMENTARY READING COURSES. Each number of The Mentor prints a list of books for supplementary reading on the subject covered by The Mentor. But in addition to this The Mentor Service includes courses of reading for its members along the lines of subjects covered by The Mentor Course. These courses of reading are prepared under the direction of members of the Advisory Board of The Mentor —all of them prominent educators.

READING CLUB PROGRAMS. The Mentor has prepared its material in the form of courses for reading clubs. The service is complete, including not only the interesting matter supplied in The Mentor, but direction as to club organization, and programs of Mentor meetings, with practical hints concerning picture material and how to use it. These Mentor courses are so arranged as to provide for any number of club meetings, from two or three up to twenty and more.

BOOK SUPPLIES. In many cases members of the Association are not in a location convenient to sources of book supply. The Mentor Association will, therefore, secure books as requested and will supply them to its members at publishers' prices.

INQUIRY DEPARTMENT. The Mentor gives to its members a full and intelligent service in answering inquiries concerning books, reading, and all matters of general information having a bearing on The Mentor courses. Inquiries from readers are referred to members of our Advisory Board or others who are leaders in their particular fields of knowledge.

MANY READERS HAVE COME TO KNOW THE VALUE OF THE MENTOR SERVICE. IN THE FULLEST SENSE IT SUPPLEMENTS AND ROUNDS OUT THE PLAN OF THE MENTOR. ALL MEMBERS OF THE ASSOCIATION ARE INVITED TO TAKE ADVANTAGE OF THIS SERVICE